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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/645,373

08/21/2003

Craig D. Tipton

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04/26/2006

THE LUBRIZOL CORPORATION  
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EXAMINER

RONESI, VICKEY M

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/645,373

Applicant(s)

TIPTON ET AL.

Examiner

Vickey Ronesi

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1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Please note that the examiner of record has changed. The new examiner is Vickey Ronesi.
2. All outstanding rejections are withdrawn in light of applicant's arguments filed 2/15/2006.
3. New grounds of rejection are set forth below since applicant's arguments filed 2/15/2006 were found persuasive. Thus, *a 2<sup>nd</sup> non-final Office action is set forth as follows.*

### *Specification*

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claim 19 recite that the composition itself comprises the elemental amounts, however, according to the specification on page 10, lines 5-9, it is the reaction product which comprises the ingredients and not the composition. The composition as claimed is open to other ingredients, including the hydrophobic reaction medium.

### *Claim Objections*

5. Claims 4 and 7 are objected to because of the following reasons:

With respect to claim 4, the word "is" should be inserted between "dispersant" and "an" in line 1 of the claim.

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With respect to claim 7, the term "thiadizole" is misspelled in line 2 of the claim and should read as "thiadiazole."

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 11, 16, 22, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 11, the term "the inorganic phosphorus acid or anyhydride" lacks antecedent basis. The term "the remaining components" lacks antecedent basis.

With respect to claims 12-14, the term "the components" lacks antecedent basis.

With respect to claim 16, the term "the composition of matter" lacks antecedent basis.

With respect to claims 22 and 23, it is not known what the amounts are of since it is the amount of the composition within another composition that is not defined. Additionally, the term "the oil-containing composition" lacks antecedent basis.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7, 11-16, and 20-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (US 4,136,043).

Davis discloses a multifunctional dispersant for lubricants for internal combustion engines such as automatic transmissions (col. 1, lines 57-59; col. 13, line 45) comprising the reaction product of 2,5-dimercapto-1,3,4-thiadiazole and derivatives thereof (which obviously include hydrocarbyl-substituted compounds) (col. 2, lines 6-37) and a carboxylic or Mannich dispersant which is already treated with boron or phosphorus compounds (col. 3, lines 36-41)—wherein the multifunctional dispersants is prepared by heating the mixture at a temperature above 100°C in a lubricant (abstract; col. 7, lines 28-31; col. 9, lines 18-37). The dispersant includes succinimide dispersant (col. 2, lines 58-63; Example 1), Mannich dispersant (col. 3, lines 28-35), ester-containing dispersant (col. 7, lines 3-7; Example 11), and viscosity modifier dispersant (col. 3, lines 51-58). The multifunctional dispersant is used in an amount of 0.05-20.0 parts by weight for 100 parts by weight of an oil lubricant (col. 13, lines 50-52; e.g., about 2 wt % of the lubricant composition in Examples A, B, and C of Table II).

While Davis teaches the use of boron- or phosphorus-modified dispersant in the reaction, it does not exemplify or disclose a combination of a specific dispersant with a boron or phosphorus compound, nevertheless, given that it teaches the post treatment of the dispersant with a boron or phosphorus compound prior to reacting with the thiadiazole compound, it would have been obvious to one of ordinary skill in the art to utilize boron- or phosphorus-treated dispersants to prepare the multifunctional dispersant of Davis, absent unexpected or surprising results for the presently claimed combination. It is noted that applicant's data as originally filed

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provides little to no probative value for such a position since they are not proper side-by-side examples (the comparative example has additional ingredients) and fail to compare directly to Davis, which is a dispersant + DMTD (comparative example only has a dispersant not combined with DMTD).

8. Claims 8, 9, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (US 4,136,043) in view of Le Suer '936 (US 4,087,936).

The discussion with respect to Davis in paragraph 7 above is incorporated here by reference.

Davis teaches that 0.1-10 parts by weight of dispersant is used per 1 part of DMTD (col. 10, lines 59-61) and exemplifies a sulfur content of up to 2.9 wt % (Examples 26-34). While Davis teaches the use of a boron compound to post treat the dispersant, it fails to further elaborate on the type of boron compound or the relative amount of boron. Note in col. 3, line 43, where Davis refers to US 3,087,936 (Le Suer '936) as exemplifying suitable post-treating compounds.

Le Suer '936 discloses the reaction product of a dispersant and a boron compound such as boric acid (col. 17, lines 16-29) at elevated temperatures (col. 17, lines 62-74). Exemplified relative amounts of dispersant to boron compound (e.g., boric acid) are 3.8 (Example B) and 2.6 (Example G). Elemental boron contents with boric acid include 0.33 % (Example B) and 0.43 % (Example G).

Given that Davis teaches that post-treating the dispersant with boron is suitable and further given that Le Suer '936 teaches that boron-containing dispersant compounds are

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particularly advantageously used in lubricant compositions for high-temperature engines (col. 2, lines 12-15), it would have been obvious to one of ordinary skill in the art to utilize suitable amounts of boron compounds like boric acid of Le Seur '936 with the multifunctional dispersant compounds of Davis.

9. Claims 10 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (US 4,136,043) in view of Le Suer (US 3,502,677).

The discussion with respect to Davis in paragraph 7 above is incorporated here by reference.

Davis teaches that 0.1-10 parts by weight of dispersant is used per 1 part of DMTD (col. 10, lines 59-61). While Davis teaches the use of a phosphorus compound to post treat the dispersant, it fails to further elaborate on the type of phosphorus compound or the relative amount of phosphorus. Note in col. 3, line 46, where Davis refers to US 3,502,677 (Le Suer '677) as exemplifying suitable post-treating compounds.

Le Suer '677 discloses the reaction product of a dispersant and a phosphorus compound such as phosphoric acids, phosphorous acids, and anhydrides thereof (col. 2, lines 19-23; col. 4, line 74 to col. 5, line 14) at elevated temperatures (col. 8, lines 30-37). The exemplified final products have exemplified amounts of up to about 1 wt % phosphorus (e.g., Example 1-5), which intrinsically provide for the presently claimed amount of phosphorus-containing compound.

Given that Davis teaches that post-treating the dispersant with boron is suitable and further given that Le Suer '677 teaches that phosphorus-containing dispersant compounds are particularly advantageously used in lubricant compositions (col. 2, lines 1-11), it would have

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been obvious to one of ordinary skill in the art to utilize suitable amounts of phosphorus-containing compounds of Le Seur '677 with the multifunctional dispersant compounds of Davis.

*Response to Arguments*

10. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

*Contact Information*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/24/2006  
Vickey Ronesi



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